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EXAMINER	
ZHEN, WEI Y	

ART UNIT	PAPER NUMBER
2191	

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,061	HINES, KENNETH J.	
	Examiner	Art Unit	
	Wei Zhen	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 13-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 13-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 10/1/04, 10/12/04, 1/10/05, 1/18/05, 4/25/05, 10/22/04, 10/18/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This office action is in response to the amendment filed on 10/1/2004.

2. Claims 1-11, 13-30 are pending.

Information Disclosure Statement

3. The information disclosure statement filed on 10/18/2004 and 10/22/2004 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list***; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials***; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11, 13-20 and 23-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu et al. US Patent No. 5,58 1,691 (hereinafter Hsu).

As Per Claim 1, Hsu discloses a method and system for A flow controller 130, a flow debugger 132, a Flow Editor 124 a flow simulator 134, and Database 1 14 and 1 16, creating log records used for work flow management. (See Abstract & F1G1, 2 and associated text). In that Hsu discloses the method that covering the steps of: creating event records including identification of a component that generated the event and a local time stamp" (E.g., see col. 12:39-51 which states "... a Log Ref 518 field that is a pointer to a corresponding log record, . . . the Arc ID 524 of the arc that connects the step that generated the event signal and the step to which the event signal is being sent. . . ." (event record & id), " . . . in the event signal are Resource data 526 regarding the step that generated the event signal, a Timestamp 530 indicating when the event was generated. . ." (timestamp));

accumulating the event records into an event database" (E.g., see col. 18:24-26 which states "the structure of the History Database 1 16, also herein called the Log Record Database, includes two tables 700 and 720. . . ." (Database)); and

displaying an evolution diagram for use by a developer in debugging the distributed software system, the evolution diagram including a graphical representation of at least a selected portion of the event database." (E.g., see FIG 20 & col. 4:54-58 which states "...a flow editor module 124 provides a graphic interface to facilitate the process of defining work flows..." (graphical representation).

As per Claim 2, the rejection of claim 1 is incorporated and further Hsu teaches displaying at least a first selected event together with the identification of the component that generated the selected event." (E.g., see FIG 20, item 702 & 704).

As per Claims 3, the rejection of claim 1 is incorporated and further Hsu teaches

"a first graphical display element representing a first component of the software system" (E.g., see col. 18: 1-2(. . .FOE records are generated by the -1-4 Termination process" (second element)).

"a second graphical display element representing a first selected event generated by the first component" (E.g., see col. 17:67::. . . FIE log records are generated by the -1-5 Arc" (first element)).

the first and second graphical display elements being juxtaposed so as to visually indicate that the first selected event was generated by the first component." (E.g., see FIG 20).

As per Claims 4, the rejection of claim 1 is incorporated and further Hsu teaches "a first graphical display element representing a first event" (E.g., see FIG 19, T4); "a second graphical display element representing a second event" (E.g., see FIG 14, T5); and "a third graphical display element indicating a causal relationship between the first and second events." (E.g., see FIG 20 & col. 17:62-67 to 18: 1-5).

As per claim 5, the rejection of claim 4 is incorporated and further Hsu teaches 'teach of the first and second graphical display elements comprises an identifiers of a component that generated the corresponding event." (E.g., see FIG 19 & 14).

As per Claims 6, the rejection of claim 4 is incorporated and further Hsu teaches "the causal relationship comprises sending a message as the first event and receiving the said message as the second event." (E.g., see FIG 13, block 14 & T5; col. 17:7-21, t1. . .if two steps A and B are to be connected as from A to B, and A's output message does not quite match B's input message, the work flow description can be set up to include a control step C between steps A and B to map the data in the message fields. . . .").

As per Claim 7, the rejection of claim 4 is incorporated and further Hsu teaches "the third graphical display element comprises an arrow extending from the first graphical display element to the second graphical display element." (E.g., see col. 18:47-56, "...The arrows pointing backwards in time indicate which log record is the predecessor of each other log record.")

As per Claim 8, the rejection of claim 4 is incorporated and further Hsu teaches "at least one of the first and second events involves of a control state change exposed at the coordination interface of one of the components." (E.g., see col. 13:31-33, "... The State Field 584 indicates the status of the step, such œs "Waiting to Start" "Executing" or "Completed" ").

As per Claims 9, the rejection of claim 4 is incorporated and further Hsu teaches "at least one of the first and second events consists of a message sent from a port at the coordination interface one of the components." (E.g., see col. 8: 1-5, "From Port ID" 258 that specify the type of component and port from which data signals are received by the arc, and a "To Type Ref ID" 260 and "To Port ID" 262 that specify the type of component and port to which the data signals are sent.").

As Per Claim 10 Hsu discloses "the visual display comprising an evolution diagram responsive to a predetermined set of event records generated during an execution of the subject software system; each event record reflecting a corresponding software system event." (E.g., see FIG 20 & col. 4:54-58 which states "... a flow editor module 124 provides a graphic interface to facilitate the process of defining work flows..." (graphical representation) and col. 6:47-59, "... a graphic information pointer 210 that points to a file of graphic information used when displaying a representation of the flow, and a Flow Type Name 212 that is a text string containing the name of the flow as shown to system users and programmers...")

"a first graphical display element representing a first component of the software system" (E.g., see col. 18: 1-2(. . .FOE records are generated by the -1-4 Termination process" (second element)).

"a second graphical display element representing a first selected event generated by the first component" (E.g., see col. 17:67::. . . FIE log records are generated by the -1-5 Arc" (first element)).

the first and second graphical display elements being juxtaposed so as to visually indicate that the first selected event was generated by the first component." (E.g., see FIG 20).

As per Claim 11, the rejection of claim 10 is incorporated and further Hsu teaches "teach of the event records is responsive to one of a timer tick, a data departure, a data arrival or a mode change." (E.g., see col. 3:9-30, "... Execution of a work flow begins when a corresponding set of externally generated input event signals are received by the flow controller...After termination of a step, output signals from the step are converted into input event signals for other steps in the work flow in accordance with "arc" data stored in the flow description database." (data arrival and departure; and col. 7:54-56, "...Timeout Duration 237 value indicates the maximum amount of time that should be allocated for execution of the associated flow or step." (Timer)).

As per Claim 13, the rejection of claim 10 is incorporated and is rejected under the same reason set forth in connection of the rejection of claim 3.

As per Claim 14, the rejection of claim 10 is incorporated and is rejected under the same reason set forth in connection of the rejection of claim 6.

As per Claim 15, the rejection of claim 10 is incorporated and is rejected under the same reason set forth in connection of the rejection of claim 6.

As per Claim 16, the rejection of claim 10 is incorporated and is rejected under the same reason set forth in connection of the rejection of claim 4.

As per Claim 17, the rejection of claim 16 is incorporated and is rejected under the same reason set forth in connection of the rejection of claim 7.

As per Claim 18, the rejection of claim 12 is incorporated and is rejected under the same reason set forth in connection of the rejection of claim 8.

As per Claim 19, the rejection of claim 12 is incorporated and further Hsu teaches "the first graphical display element includes indicia identifying an exported variable of the first component and indicating its current value." (E.g., see col. 8:51-62, "... The record 321 also has a Data Type value 326, indicating whether the data in this field is an integer, floating point number, string, and so on...").

Claim 20 is rejected under the same reason set forth in connection of the rejection of "partially ordering the event database based on the time stamps" (E.g., see col. 19:3-5, "All the log records for all the ongoing work flows are dumbly stored, typically on disk storage devices, usually in a simple time sequential order.").

As per Claim 23, the rejection of claim 1 is incorporated and further Hsu teaches tithe execution is simulated." (E.g., see col. 5: 18-21, "A flow debugger 132 and flow simulator 134 are software modules used during the process of defining work flows to assist the programmer while checking and debugging the detained work flows.").

As per Claim 24, the rejection of claim 20 is incorporated and further Hsu teaches "the execution is carried out on a target hardware platform" (E.g., see col. 1:41-55, "... The data collection process involves numerous interactions with various pieces of hardware and/or human principals, and the duration of the work flow may be extended, depending on the availability of all the required participating computers and other pieces of hardware...").

As per Claim 25, the rejection of claim 20 is incorporated and further Hsu teaches "generate event records at selected points in execution that are not events exposed at the coordination interface of a component." (E.g., see col. 3: 10-13;16:31-42).

As Per Claim 26, the rejection of claim 20 is incorporated and further Hsu teaches "the execution is carried out on a distributed, embedded target hardware platform comprising a plurality of hardware subsystems, and the event records are collected from each hardware subsystem." (E.g., see FIG 1 and col. 3:39-40).

As per Claim 27, the rejection of claim 20 is incorporated and further Hsu teaches "displaying the evolution diagram includes combining a selected sequence of events on a single component so as to form an event cluster, and then displaying the event cluster." (E.g., see FIG 20 & col. 9:25-31).

As per Claim 28, the rejection of claim 20 is incorporated and further Hsu teaches "combining a selected group of components so œs to form a component cluster, and then displaying a single trace representing the component cluster." (E.g., see FIG 20 & col. 9:25-31).

As per Claim 29, the rejection of claim 20 is incorporated and further Hsu teaches "combining a selected group of state traces so as to form a state cluster, and then displaying a single trace representing the state cluster." (E.g., see FIG 16, 20 & col. 9:25-31, 13:31-33).

As per Claim 30, the rejection of claim 20 is incorporated and further Hsu teaches ("filtering selected events, states or components from the evolution diagram." (E.g., see col. 10: 57-63).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al. US Patent No. 5,581,691 (hereinafter Hsu) in view of Malone et al. US Patent No. 5,819,270 (art of record , hereinafter Malone).

As Per Claim 21, the rejection of claim 20 is incorporated and further Hsu doesn't explicitly disclose hiding subsystem interactions from view. However, Malone teaches "selecting one of the design levels and displaying an evolution diagram corresponding to the selected design level including graphical indicia including events exposed at the coordination interfaces of components defined at the selected design level, thereby hiding subsystem interactions from view." (E.g., see col. 12:50-65, "... On the other hand, the system could be designed to display only one level at a time for each individual activity."). Therefore, it would have been obvious to one of ordinary skill in the alt at the time the invention was made incorporate the teaching of Malone into the system of Hsu, to hide subsystem interactions from view. The modification

would have been obvious because one of ordinary skill in the art would have been motivated so that the subsystem interactions would be transparent to the user.

As Per Claim 22, the rejection of claim 21 is incorporated and further Hsu doesn't explicitly disclose selecting subsystem interactions view. However, Malone teaches "selecting a temporal subset of the event database for inclusion in the displayed evolution diagram thereby selectively focusing on a region of interest to the developer." (E.g., see col. 12:50-65, "... a user may select to view a decomposition to the depth of a second level..."). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teaching of Malone into the system of Hsu, to select subsystem interactions view. The modification would have been obvious because one of ordinary skill in the art would have been motivated to have the depth of the decomposition displayed be preferably controlled by the user.

Response to Arguments

6. Applicant's arguments filed on 10/1/2004 have been fully considered but they are not persuasive.

In the remark, applicant has argued

1) Hsu does not disclose "an evolution diagram" to represent an "event database" with "event records" that include "identification of a component that generated the event" and "time stamp" as in claim 1; Hsu does not disclose displaying an evolution diagram that includes a first element representing a component of software system and a second element representing an event generated by the component as in claim 10; Hsu also does not disclose the first and

second elements are juxtaposed in the visual display to show that the "event was generated by the component" as in claim 10.

2) Malone relates to a system for displaying representations of process, such as models of complex business transactions. Neither Hsu nor Malone provides a motivation to combine Hsu and Malone. Furthermore, Malone does not disclose or suggest the features of the pending claims quoted above with regard to Hsu.

3) claim 4 pertains to displaying an evolution diagram with first and second display element representing first and second events, as well as a third display element "indicating a causal relationship between the first and second events." Claim 13 involves the following specific display elements: "a generally horizontal bar" representing the component of the software system, and "a generally vertical icon overlapping the generally horizontal bar" representing the event generated by that component. Claim 7 recites that "the third graphical display element comprises an arrow extending from the first graphical display element to the second graphical display element." Claim 27 involves "combining a selected sequence of events on a single component so as to form an event cluster, and then displaying the event cluster." Even if Hsu and Malone were to be combined, the combination would not disclose or suggest these features, as recited in the pending claims. Even if Hsu and Malone were to be combined, the combination would not disclose or suggest these features, as recited in the pending claims.

Examiner's response.

1) Hsu clearly discloses "an evolution diagram" to represent an "event database" with "event records" that include "identification of a component that generated the event" and "time stamp" (E.g., see col. 12:39-51 which states "... a Log Ref 518 field that is a pointer to a

corresponding ***log record***, . . . the ***Arc ID 524*** of the arc that connects the step that generated the event signal and the step to which the event signal is being sent. . . ." ***(event record & id)***, " . . . in the event signal are Resource data 526 regarding the step that generated the event signal, a ***Timestamp 530*** indicating when the event was generated. . ." (timestamp)) as in claim 1; Hsu also clearly disclose "a first graphical display element representing a first component of the software system" (E.g., see col. 18: 1-2(. . .FOE records are generated by the -1-4 Termination process" (second element)); "a second graphical display element representing a first selected event generated by the first component" (E.g., see col. 17:67::. . . FIE log records are generated by the -1-5 Arc" (first element)); the first and second graphical display elements being juxtaposed so as to visually indicate that the first selected event was generated by the first component." (E.g., see FIG 20) as in claim 10 (see the previous office action for rejection of claim 3. Applicant has failed to point out the error in the rejection, therefore, the rejection is maintained.

2) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would have been motivated so that the subsystem interactions would be transparent to the user.

3) Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant has failed to point out the error in the rejection of these claims, therefore, the rejections are proper and are maintained.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wei Zhen whose telephone number is 571-272-3708. The examiner can normally be reached on Monday-Friday 8:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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